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## Dr Kellermann Responds

TO THE EDITOR: The rhetorical excess of Dr Faria's essay is typical of the language used by critics of firearms-related research. Its success depends on painting opponents as extremists. If the argument cannot be won on scientific grounds, alternative strategies must be used. It is obvious that Dr Faria is not a constitutional scholar. Neither am I. But most of us learned in eighth-grade civics that the Supreme Court is the ultimate authority on the meaning of the Constitution, however. Both the supreme court and various federal appellate courts have repeatedly held that federal, state, and local governments can place reasonable limits on firearm ownership (W. E. Burger, "The Meaning, and Distortion, of the Second Amendment." *The Keene [NH] Sentinel*, November 26, 1991).<sup>1</sup>

It is not necessary for an agent to conform to Koch's postulates to qualify as a public health hazard. Furthermore, it is rarely necessary to ban a hazard to reduce its adverse effects. Motor vehicles and cigarettes are prime examples of both concepts. Car crashes remain a leading cause of death in the United States, but we have been able to substantially reduce the rate of death per million vehicle miles driven through better automobile design, safer roadways, and tougher enforcement of speed limits and drunk-driving laws.<sup>2</sup> We have also made impressive progress in reducing the rate of death from cigarette-related heart disease by educating the public about the health hazards of smoking.<sup>3</sup> Strategies like these could be used to reduce many firearm-related injuries and deaths as well.<sup>4</sup>

At two points in his essay, Faria refers to "draconian" gun control laws in the United States. Which laws does he consider draconian? Is a waiting period and criminal background check draconian? Are laws that restrict handgun purchases to one a month draconian? Are laws that outlaw the sale of handguns to minors draconian? Is any gun control law reasonable, or should all of them be abolished?

Physicians can and should play a key role in responding to the growing problem of firearm-related violence. Faria's comments remind us how far we have to go.

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## Medical Costs Then and Now

TO THE EDITOR: Thank you for publishing the interesting commentary by Michael J. Hennessy, MD, regarding the thyroid operations on his grandmother.<sup>1</sup> In 1907 one of the Drs Mayo performed a successful thyroidectomy in the face of thyroid storm by immersing the patient in an ice bath. He operated on a recurrence 30 years later for the same fee.

The value of money has changed so much during the interim that the size of those fees may not be clear to some readers. It's a little hard to measure inflation accurately, as we buy different things at different times. In 1907, however, an eight-room house could probably have been bought for \$3,000, a woolen suit for \$4, and a large glass of beer for a nickel (sometimes with free snacks). From such numbers, it is likely that prices have risen 40- to 50-fold. Thus, Dr Mayo's surgeon's bill of \$240 would be equivalent to perhaps \$10,000 today.

The 1937 fee of \$240 can be related to a worker's income of about \$1,200. When my father took me to see the circus train unload in 1940, I bought a hamburger for a nickel, although his cost ten cents. Our maid was paid \$260 a year plus board and room. It looks as though surgeons' incomes have been going backwards for 90 years. By any calculation, hospital charges have been moving in the opposite direction.

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## Dr Hennessy Responds

TO THE EDITOR: I want to thank Dr Burdick for his observations and perspective regarding turn-of-the-century medical costs. There was indeed a time when a nickel candy bar cost five cents.

The point of my article was fiscal vigilance. When direct exchange of money occurred between patient and physician, the value of service could be directly judged. The fiscal intermediary of health insurance and the myriad systems of managed care clouds the issue for patients. We enter an era in which profit is taken from those who request medical care and those who provide medical care. Administrative costs and shareholder profits threaten to erode our medical resources. Within our

organizations and as individual physicians, we must demand "fair" distribution.

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## Lead Poisoning Alert—False Alarm?

TO THE EDITOR: The childhood lead poisoning review by Landrigan and Todd in your August 1994 issue is misleading, and the accompanying editorial implies that symptomatic lead poisoning is widespread.<sup>1,2</sup> Clinicians are aware that following implementation of the anti-lead legislation of the 1970s, symptomatic lead poisoning has been rapidly disappearing because of logarithmically plummeting blood lead levels. The recent National Health and Nutrition Examination Surveys (NHANES III) found more than a fourfold decrease (from 12.6  $\mu\text{g}$  per dl to 2.8  $\mu\text{g}$  per dl) in the mean blood lead level of the United States population from 1986 through 1991 compared with the mean level from 1976 through 1980.<sup>3,4</sup> A 10-fold fall in the prevalence of blood lead levels of 10  $\mu\text{g}$  per dl or higher (from 88.5% to 8.9%) and a 20-fold fall (from 24.7% to 1.1%) in blood lead levels of 20  $\mu\text{g}$  per dl or higher occurred from 1976 to 1991.

Evidence that low blood lead levels (<20  $\mu\text{g}$  per dl) cause subclinical neurobehavioral defects is inconclusive and contradictory; studies are complicated by confounding variables, small effect size, and imprecise outcome measures. Recent research showed no ill effects of low blood lead levels in toddlers in a developing country.<sup>5</sup>

Effects of low lead levels have been exaggerated. A recent epidemiologic review by Pocock and colleagues showed that neonatal lead exposure had no effect on childhood IQ and that lead exposure in the first years of life had a slight effect (1 to 2 IQ points).<sup>6</sup> Alternative explanations for this small effect, including reverse causality, must be considered, however. The review indicates that the priority of childhood lead detection and intervention is debatable.<sup>6</sup>

Universal childhood lead screening risks falsely labeling normal children as brain damaged. Falsely high blood lead levels are common, particularly when capillary blood is used. No evidence exists that chelation therapy benefits children with low or moderately elevated lead levels,<sup>2</sup> and this treatment might cause harm. Experience with the new oral chelator meso-2,3-dimercaptosuccinic acid (succimer [DMSA]) is limited; caution in its use is advised. Improper lead abatement has elevated blood lead levels in children. A multibillion-dollar, publicly financed industry in lead screening and abatement is burgeoning. Landlords are abandoning low-cost housing because of increasing liability, which will increase homelessness.

Public education about childhood lead poisoning and screening of high-risk groups should be encouraged, but diverting billions of dollars to address a disappearing problem of questionable importance is wasteful. Our child health care resources are better spent addressing

critical health deficiencies such as violence, noncompliance with immunization, child abuse, teenaged pregnancy, drug and alcohol use, prematurity, homelessness, and pediatric acquired immunodeficiency syndrome.

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## Drs Landrigan and Todd Respond

TO THE EDITOR: Dr Schoen argues that lead at low blood levels is not toxic to children and that there is therefore no need to screen children for lead. Dr Schoen's scholarship in support of these arguments is highly selective. His reasoning is faulty. And his conclusions are wrong.

Four extraordinarily well-conducted, prospective epidemiologic studies have shown that blood lead levels in the range of 10 to 20  $\mu\text{g}$  per dl are associated with neurologic and behavioral impairment in children.<sup>1-4</sup> Data from these studies form the basis for current recommendations from the Centers for Disease Control and Prevention (CDC) on childhood lead screening.

The replication of original results in multiple studies undertaken by different investigators in different populations at different times and under different circumstances constitutes the strongest evidence of causality in epidemiologic research. This criterion of replicability has been amply fulfilled in the analysis of low-level lead toxicity. The above-cited studies were undertaken among white American children in Boston, Massachusetts,<sup>1</sup> African-American children in Cincinnati, Ohio,<sup>2</sup> Australian children in Port Pirie, Australia,<sup>3</sup> and Croatian children in northern Yugoslavia.<sup>4</sup> All have shown that blood lead levels in the range of 10 to 20  $\mu\text{g}$  per dl are associated with subclinical neurologic and behavioral dysfunction. Moreover, these studies have undergone detailed independent review by the CDC<sup>5</sup> and by the United States National Academy of Sciences.<sup>6</sup> Both of these distinguished bodies have concurred in the principal conclusion of those studies, and they have determined that blood lead levels between 10 and 20  $\mu\text{g}$  per dl are causally associated in young children with per-